Group Members:

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Q1: Brief of the project?

Project Brief:

Title: Simple Lexical Analyzer for Basic Programming Language

Objective: The project aims to implement a simple lexical analyzer for a basic programming language using C#. The lexical analyzer identifies and tokenizes various elements of the source code, such as identifiers, numeric literals, and operators. The primary focus is on understanding the fundamental principles of lexical analysis and building a foundation for further stages in compiler construction.

Features:

1. Tokenization of identifiers (including keywords), numeric literals, and basic arithmetic operators.
2. Recognition of assignment operator for variable assignment.
3. Handling of basic syntax elements like parentheses.

Components:

1. **Lexer Class:**
    - Contains methods for reading characters, skipping whitespace, and extracting tokens.
    - Implements logic to recognize and tokenize identifiers, numeric literals, and operators.

2. **Token Class:**
    - Represents a token with a type and value.
    - Enumerates different token types such as identifiers, numeric literals, operators, etc.
3. **Main Program:**
    - Demonstrates the usage of the lexer by providing a sample input code.
    - Iteratively obtains tokens from the lexer and prints their types and values.